

Claims:

1. A method of motion-compensated predictive image encoding, comprising the steps of:

estimating (ME) first motion vectors (MVc, MVi, MVr, MVa, MVb) for first objects (16\*16);

5 filtering (MVPF) said first motion vectors (MVc, MVi, MVr, MVa, MVb) to obtain second motion vectors (MV1, MV2, MV3, MV4) for second objects (8\*8), said second objects (8\*8) being smaller than said first objects (16\*16);

generating (3) prediction errors in dependence on said second motion vectors (MV1, MV2, MV3, MV4); and

10 combining (VLC) said first motion vectors (MVc, MVi, MVr, MVa, MVb) and said prediction errors.

2. A method as claimed in claim 1, wherein said first objects (16\*16) are macro-blocks, said second objects (8\*8) are blocks, and said filtering step (MVPF) comprises the 15 steps of:

providing x and y motion vector components of a given macro-block (MVc) and of macro-blocks (MVi, MVr, MVa, MVb) adjacent to said given macro-block (MVc); and

supplying for each block (MV1) of a number of blocks (MV1-MV4) corresponding to said given macro-block (MVc), x and y motion vector components 20 respectively selected from said x and y motion vector components of said given macro-block (MVc) and from the x and y motion vector components of two blocks (MVi, MVa) adjacent to said block (MV1).

3. A device for motion-compensated predictive image encoding, comprising:
  - means for estimating (ME) first motion vectors (MVc, MVi, MVr, MVa, MVb) for first objects (16\*16);
    - means for filtering (MVPF) said first motion vectors (MVc, MVi, MVr, MVa, MVb) to obtain second motion vectors (MV1, MV2, MV3, MV4) for second objects (8\*8), said second objects (8\*8) being smaller than said first objects (16\*16);
      - means for generating (3) prediction errors in dependence on said second motion vectors (MV1, MV2, MV3, MV4); and
      - means for combining (VLC) said first motion vectors (MVc, MVi, MVr, MVa, MVb) and said prediction errors.

4. A method of motion-compensated predictive decoding, comprising the steps of:
  - generating (VLC<sup>-1</sup>) first motion vectors (MVc, MVi, MVr, MVa, MVb) and prediction errors from an input bit-stream, said first motion vectors (MVc, MVi, MVr, MVa, MVb) relating to first objects (16\*16);
    - filtering (MVPF) said first motion vectors (MVc, MVi, MVr, MVa, MVb) to obtain second motion vectors (MV1, MV2, MV3, MV4) for second objects (8\*8), said second objects (8\*8) being smaller than said first objects (16\*16); and
    - generating (15, MC) an output signal in dependence on said prediction errors and said second motion vectors (MV1, MV2, MV3, MV4).

5. A method as claimed in claim 4, wherein said first objects (16\*16) are macro-blocks, said second objects (8\*8) are blocks, and said filtering step (MVPF) comprises the steps of:
  - providing x and y motion vector components of a given macro-block (MVc) and of macro-blocks (MVi, MVr, MVa, MVb) adjacent to said given macro-block (MVc); and
    - supplying for each block (MV1) of a number of blocks (MV1-MV4) corresponding to said given macro-block (MVc), x and y motion vector components respectively selected from said x and y motion vector components of said given macro-block (MVc) and from the x and y motion vector components of two blocks (MVi, MVa) adjacent to said block (MV1).

6. A device for motion-compensated predictive decoding, comprising:  
means for generating (VLC<sup>-1</sup>) first motion vectors (MVc, MVi, MVr, MVa,  
MVb) and prediction errors from an input bit-stream, said first motion vectors (MVc, MVi,  
MVr, MVa, MVb) relating to first objects (16\*16);

5 means for filtering (MVPF) said first motion vectors (MVc, MVi, MVr, MVa,  
MVb) to obtain second motion vectors (MV1, MV2, MV3, MV4) for second objects (8\*8),  
said second objects (8\*8) being smaller than said first objects (16\*16); and  
means for generating (15, MC) an output signal in dependence on said  
prediction errors and said second motion vectors (MV1, MV2, MV3, MV4).

10 7. A multi-media apparatus, comprising:  
means (T) for receiving a motion-compensated predictively encoded image  
signal; and  
a motion-compensated predictive decoding device as claimed in claim 6 for  
15 generating a decoded image signal.

8. An image signal display apparatus, comprising:  
means (T) for receiving a motion-compensated predictively encoded image  
signal;  
20 a motion-compensated predictive decoding device as claimed in claim 6 for  
generating a decoded image signal; and  
means (D) for displaying said decoded image signal.

9. A motion-compensated predictively encoded image signal, comprising:  
25 motion vectors (MVc, MVi, MVr, MVa, MVb) relating to first objects  
(16\*16); and  
prediction errors relating to second objects (8\*8), said second objects (8\*8)  
being smaller than said first objects (16\*16), wherein said prediction errors depend on  
motion vectors for said second objects (8\*8).